

**Notice of Allowability**

Application No.

10/786,218

Examiner

Anjan K. Deb

Applicant(s)

WEAVER, THOMAS L.

Art Unit

2858

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 02/25/2004.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 25 February 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is in response to application filed 2/25/2004.

#### ***Examiner's Amendment***

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with attorney of record Mr. Smith, Clyde on 6/3/2005.

The application has been amended as follows:

In the abstract line 1, delete "the".

In the abstract line 2, delete "is disclosed".

In the specification, page 9, line 13, replace, "stand" with --strand--

In claim 6, replace "18" with --5--

***Allowable Subject Matter***

3. Claims 1-20 are allowed.

***Reasons for Allowance***

4. The following is an examiner's statement of reasons for allowance:

The primary reason for allowance of the claims 1-13 is the inclusion of electrical cable comprising at least one electrically conductive wire and plurality of optical waveguides and a wavelength division multiplexing multiplexer/demultiplexer operatively connecting each of the plurality of optical waveguides to optical waveguide connector.

Claims 14-20 are allowed because the prior art does not disclose or fairly suggest a method comprising the recited steps to monitor a cable for chafing damage.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If

Art Unit: 2858

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lefkowitz Edwards can be reached at 571-272-2180.

### *Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Amano et al. (US 5,178,465) discloses method and apparatus for detecting a trouble occurrence location along electric cable 1 assembly comprising at least one electrically conductive wire 1 (3A to 3D) and optical fibers (optical waveguides 5A to 5D)(Fig. 2). Amano et al. does not disclose wavelength division multiplexing multiplexer/demultiplexer operatively connecting each of the plurality of optical waveguides to optical waveguide connector.

Siems et al. (US 6,591,025 B1) discloses optical sensing system comprising plurality of optical waveguides and wavelength division multiplexing (Fig. 12). Siems et al. does not disclose an assembly comprising an electrical cable comprising at least one electrically conductive wire and plurality of optical waveguides.

McMahon (US 4,432,599) discloses fiber optic differential sensor comprising plurality of optical waveguides (Fig. 7) and time division multiplexing (Fig. 2).

Snitzer et al. (US 4,298,794) discloses power cable assembly comprising at least one electrically conductive wire (power cable) and plurality of optical waveguides (10,12,14) coupled for transmitting light from source 18 and detector for detecting defect in cable (hot spots) based upon light of predetermined wavelength received from plurality of optical waveguides (Fig. 2). Snitzer et al. does not disclose wavelength division multiplexing

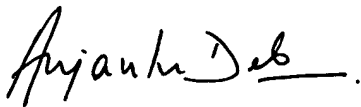
Art Unit: 2858

multiplexer/demultiplexer operatively connecting each of the plurality of optical waveguides to optical waveguide connector.

Born (US 6,265,880) discloses apparatus and method for detecting conduit chafing comprising optical waveguide wrapped around conduit. Holmbo (US 5,155,439) discloses optical time domain reflectivity method of determining cable anomalies (Fig. 1). Born and Holmbo also did not disclose wavelength division multiplexing.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lefkowitz Edwards can be reached at 571-272-2180.



**Anjan K. Deb**  
Patent Examiner  
Art Unit: 2858

6/3/05

Tel: 571-272-2228  
Fax: 571-273-2228  
E-mail : [anjan.deb@uspto.gov](mailto:anjan.deb@uspto.gov)